

**CONSULTING ENGINEER'S
ANNUAL REPORT**

**MIFFLIN COUNTY MUNICIPAL AUTHORITY
MIFFLIN COUNTY, PENNSYLVANIA**

**OPERATION AND MAINTENANCE OF
WATERWORKS SYSTEM**

2022

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INTRODUCTION AND BACKGROUND

This annual report reflects the first full year of operation, calendar year 2022, as the Mifflin County Municipal Authority.

In 2021 the water system had two owning entities. From January 1, 2021, through September 29, 2021, the public water supply system was owned and operated by the Municipal Authority of the Borough of Lewistown (MABL). Beginning on September 30, 2021, the public water supply system underwent a transfer of operations to the Mifflin County Municipal Authority (the Authority). The system is now owned and operated by the Mifflin County Municipal Authority.

In 2021 the Authority issued \$24,605,000 of Water Revenue Bonds, Series of 2021 and in addition to providing funds for the purchase of the water treatment and distribution system of MABL, approximately \$13,750,000 of the Bonds were set aside to fund certain capital projects of the Authority including, but not limited to, the replacement or installation of water supply lines at numerous locations, repairs and improvements to fire suppression lines and facilities, plant upgrades, including the installation of settling basins and lagoons, and meter replacements as well as approximately \$1,300,000 for the funding of initial operating capital. Also related to the purchase of the water system, the Authority agreed to pay the Borough of Lewistown, Pennsylvania, \$1,000,000 together with the execution and delivery of a water revenue promissory note payable, representing the obligation of the Authority to make annual installment payments over thirty years beginning in 2021.

One major event occurred in 2022. The public water supply system serving the Hawstone area of Granville Township was acquired by the Authority. Hawstone is a small water system serving less than 100 customers. It has been a struggling system and will benefit from being part of a larger, well capitalized water system.

PART I EXTENSIONS, REPAIRS AND IMPROVEMENTS

A. TRANSMISSION MAINS/WATER SUPPLY

The Mifflin County Municipal Authority (MCMA) serves residents in Mifflin County, Pennsylvania by providing potable drinking water, through a complex maze of almost 300 miles of transmission and distribution mains. MCMA also provides fire protection with approximately 600 fire hydrants throughout the service area. MCMA served approximately 30,000 residents in the county and maintained over 11,000 billable accounts in 2022.

B. DISTRIBUTION MAINS

Two (2) distribution mains were completed in 2022:

- 1) Installed 1,000' of 2" polyethylene pipe on Jewel Street, Granville Township. Project # 125065
The cost of 1,000' of installed pipe was \$13,709 (\$14/ft.)
- 2) Installed 420' of 6" cement lined ductile iron pipe on Shelly Drive, Brown Township. Project # 125080
The cost of 420' of installed pipe was \$21,948 (\$52/ft.)

Three (3) distribution mains were replaced in 2022:

- 1) Installed 500' of 6" cement lined ductile iron pipe on Cornell Street, Derry Township. Project # 125025
The cost of 500' of installed pipe was \$50,297 (\$101/ft.)
Replaced aged and deteriorated infrastructure – 500' of 6" cast iron pipe.
12 service lines renewed.
- 2) Installed 170' of 1" polyethylene pipe on Henrietta Street, Granville Township. Project # 125024
The cost of 170' of installed pipe was \$6,012 (\$36/ft.)
Replaced aged and deteriorated infrastructure – 170' of 2" galvanized pipe.
2 service lines renewed.
- 3) Installed 5,400' of 8" cement lined ductile iron pipe on Valley Street, Lewistown Borough. Project # 125043
The cost of 5,400' of installed pipe, completed by Sippel Development Co Inc was \$2,375,012 (\$440/ft.)
Replaced aged and deteriorated infrastructure – 5,400' of 8" cast iron pipe.
170 service lines renewed.

Average installation costs 2022:

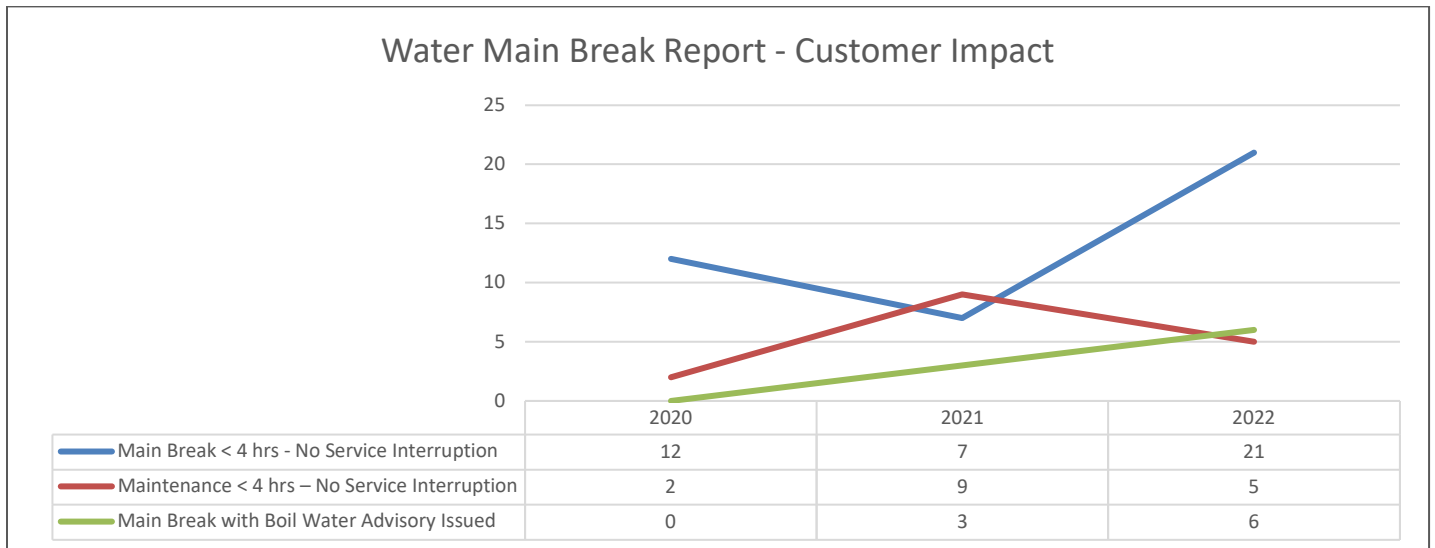
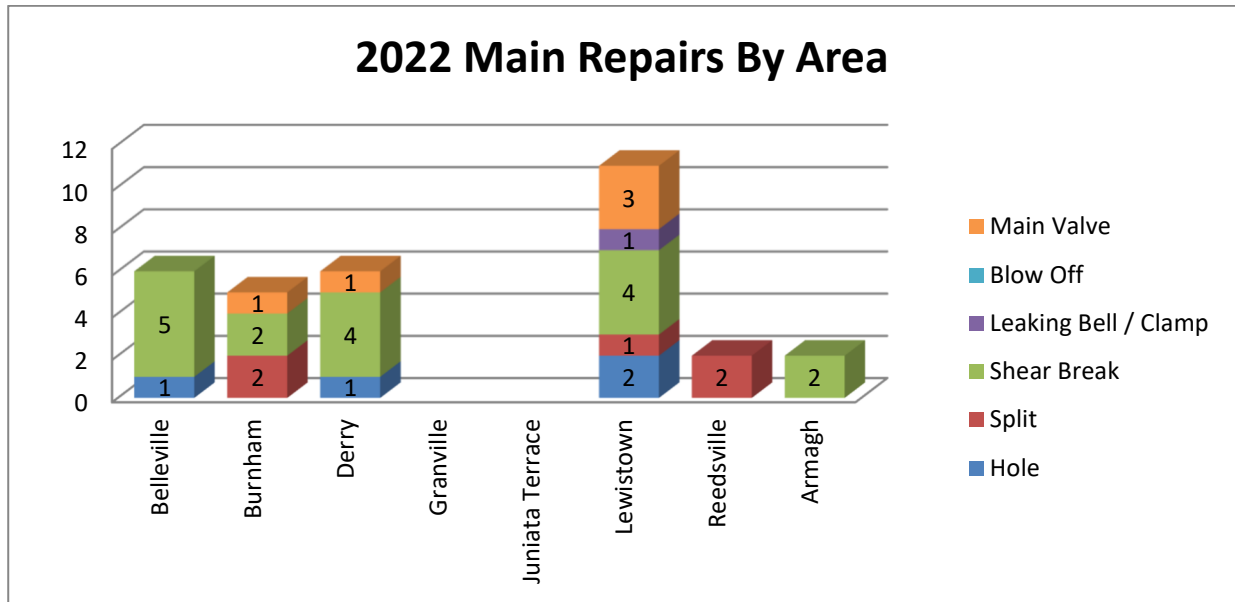
Material	\$ Cost / Foot 2022	\$ Cost / Foot Historically
1" Polyethylene	\$36	N/A
2" Polyethylene	\$14	\$26
6" Cement Lined Ductile Iron	\$77	\$72
8" Cement Lined Ductile Iron	\$440	\$136
10" Cement Lined Ductile Iron	-	\$125
20" Cement Lined Ductile Iron	-	\$225

**TABLE NO. 1
 MAIN EXTENSIONS INSTALLED UNDER NO-REFUND or REIMBURSEMENT AGREEMENTS
 DURING THE YEAR 2022**

<u>EXTENSION#</u>	<u>NAME & ADDRESS</u>	<u>LINE SIZE</u>	<u>COST</u>
PA DOT # 02U313	Valley Street Reimbursement Portion Lewistown, PA	8"	\$884,129.80
TOTAL			

C. MAINTENANCE OF MAINS AND VALVES

In addition to the preceding improvements, data on main repairs by type and location is used for future infrastructure planned maintenance. The following graphs summarize the repairs made:



Maintenance and other general repairs that were completed throughout the system during the report year:

<ul style="list-style-type: none"> Semi-annual leak detection Flushing 	Entire System
<ul style="list-style-type: none"> Install Auto Flusher 	Woodland Circle & SR 1005, Oakridge Road Vault
<ul style="list-style-type: none"> Replace Auto Flusher 	Noerr Lane, Lewistown

D. SERVICE LINES

New Service Lines Installed 2022:

- 10 ¾" Copper/Polyethylene Line
- 4 ¾" Copper/Polyethylene Line with Meter Pit
- 1 1" Copper/Polyethylene
- 2 2" Copper/Polyethylene
- 1 6" Fire Line Tap

Service Lines Renewed 2022:

- 184 ¾" Polyethylene Replacing ¾" Copper - *Recorded with project cost

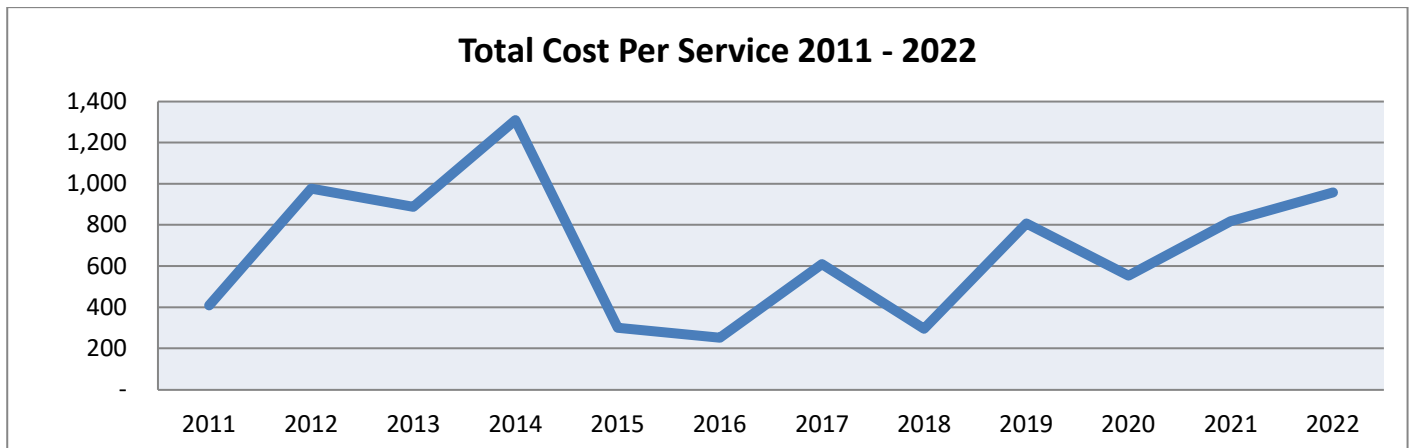
The total expenditure of \$17,226.70 for service line installations can be categorized as follows:

11,405.74	Labor
<u>5,820.96</u>	Materials, Permits, Restoration
\$17,226.70	Total

The following tabulation shows the breakdown of the costs of Authority service lines from 2011 to 2022 inclusive:

HISTORICAL ANALYSIS OF ANNUAL SERVICE LINE COSTS

YEAR	NEW SERVICES	*SERVICES RENEWED	TOTAL	TOTAL COST OF SERVICE LINES (\$)	COST OF LABOR PER SERVICE (\$)	MATERIAL & PERMITS PER SERVICE (\$)	TOTAL COST PER SERVICE (\$)
2011	11	7	18	7,355.40	257.30	151.34	408.63
2012	16	3	19	18,532.57	409.12	566.27	975.40
2013	19	2	21	18,628.28	572.89	314.17	887.06
2014	20	7	27	35,344.84	629.14	679.93	1,309.07
2015	93	1	94	28,285.33	186.45	114.46	300.91
2016	117	7	124	31,307.75	104.68	147.80	252.48
2017	53	10	63	38,399.13	295.43	314.08	609.51
2018	29	4	33	9,775.11	232.18	64.03	296.22
2019	16	11	27	21,774.37	462.29	344.17	806.46
2020	19	2	21	11,616.23	188.68	364.47	553.15
2021	26	113	26	21,252.23	215.45	601.94	817.39
2022	18	184	18	17,226.70	633.65	323.39	957.04



The unit cost of service line installation was \$957.04, an increase of \$139.65 or a 17.1% increase compared to 2021.

E. METERS

New Meters and Electronic Reading Devices purchased in 2022:

No. Purchased	Meter Size & Type
74	5/8 x 3/4 Badger Meter
3	1" Badger Ultrasonic Meter
1	1 1/2" Badger Ultrasonic Meter
1	1" Sensus Meter
2	1 1/2" Sensus Meter
2	2" Badger E-Series Meter
1,144	Badger HR-E Register
1	Badger HR-E Registers 1"
2	Badger HR-E Registers >1"

ERT's Scrapped:

105 Itron 50W & 60W

During 2022, there were 2,790 service calls made. A 5% increase compared to 2021.

Meter Vault Maintenance:

- Pumping as needed
- Replace PRV and plumbing – Ferguson Valley Rd, Derry Township

F. FIRE HYDRANTS AND FIRE LINE SERVICE

Five (5) fire hydrants were replaced:

- Valley St at 3rd St and Spruce St – Lewistown Borough
- Valley St and N Walnut St – Lewistown Borough
- Valley St and Catherine St – Lewistown Borough
- Valley St and Central Ave – Lewistown Borough
- 2 Manor Dr, MCMS – Lewistown Borough

Four (4) new fire hydrants were installed:

- Valley St at N Dorcas St – Lewistown Borough
- Cornell St and Knepp Ave – Derry Township
- Shelly Dr – Brown Township
- SR 655, Metzler – Brown Township

Five (5) hydrants were repaired during the report period.

G. LAUREL CREEK FILTRATION PLANT, INTAKE, WATER SUPPLY AND DAM STRUCTURES

During 2022, regular maintenance was performed at the Laurel Creek Filtration Plant intakes and dam as well as the following items:

Laurel Creek Filtration Plant

- Replaced turbidimeters (2)
- Replaced actuators (5)
- Cleaned lagoons and hauled cake sludge from drying beds
- Mock tank contamination drill with PA DEP
- Replaced front entrance doors
- Thaddeus Stevens College group tour
- Cleaned parking lot drain and culvert

- Installed new fluoride analyzer
- Installed new CL17 controller
- Replaced concrete entrance steps
- Installed new pre-chlor rotometers
- Installed a new pressure switch at the domestic water feed line and instrumentation panel

Water Supply

- Installed new stream release level transmitter
- Harmful Algal Bloom testing completed, negative results
- Drought watch issued 9/7/22
- Replaced security signs and hardware
- Repaired spillway voids
- Replaced LED flood lights
- SRBC flow parameters on Milroy wells were modified

Storage Tanks

- Contact tanks #1 and #2 pressure washed
- Backwash tanks #1 and #2 drained, inspected, cleaned and tested
- Clear well drained, inspected and cleaned
- Repaired concrete lagoon overflow pipe

Ozone Generator/Contact Room

- Completed ozone compressor maintenance
- Completed quarterly maintenance schedule
- Installed new ozone analyzers

Sodium Hypo Room

- Installed a basket strainer
- Installed electrical snubbers
- Cleaned and flushed salt brine day tank

Laboratory

- Replaced lab thermometers
- Replaced lab desk and cabinet
- Lead and copper testing completed – all samples below MCL
- Completed well compliance testing
- No violations on DEP regulatory testing

Office & Controls

- Installed new office desk
- Replaced SCADA fans
- Cybersecurity upgrade

H. CONTROL AND PUMPING STATIONS

Transmission mains deliver water from the Laurel Creek Filtration Plant to twenty-three (23) individual pressure control stations located throughout the distribution system. Valve operation and flow values were recorded quarterly. Closing speeds were inspected and adjustments were made accordingly. Maintenance performed during the report year:

Hartman's Center & RT 322 – Milroy

Electric Avenue & RT 322 – Milroy

- Inspected and cleaned 4" pressure reducing valve

Treaster Valley – Milroy

- Inspected and cleaned 2" pressure reducing valve
- Replaced regulator spring

RT 322 – Milroy

Coopers Gap – Reedsville

Tea Creek – Reedsville

Reedsville Mill – Reedsville

Lumber City – Reedsville

- Inspected and cleaned 2" pressure reducing valve

Bender Park – Reedsville

- Inspected and cleaned 6" and 10" pressure reducing valves
- Installed a rebuild kit on the 6" pressure reducing valve

East Belleville PRV/Altitude Valve – Belleville
 Ferguson Valley Road (Police Station) – Yeagertown
 Ferguson Valley Road – Lewistown
 Freedom Avenue – Burnham
 East Lewistown Parcheytown – Lewistown
 Rolling Hills/Derry Tank – Lewistown

- Inspected and cleaned 4" pressure reducing valve

Amy Lane – Lewistown

- Inspected and cleaned 2 ½" and 8" pressure reducing valves

3rd Avenue & Highland Avenue (Ort Valley) – Lewistown

Sandy Lane – Lewistown

- Inspected and cleaned 2 ½" and 8" pressure reducing valves

Ard's Ridge – Lewistown

Helen Street – Lewistown

West 4th Street – Lewistown

US 22/522 N (Lowe's) – Lewistown

Industrial Park Road – Lewistown

- Inspected and cleaned 2" and 6" pressure reducing valves

There are four (4) pumping stations that are used to increase water pressure or to fill storage tanks. The pumping stations, the pumping capacities - gallons per minute (GPM) and maintenance for the report year:

Route 655 Woolen Mills – Reedsville

Capacity (GPM): 700

- Quarterly inspection

Mechanic Street – Belleville

Capacity (GPM): 240

- Quarterly inspection

Oak Street – Milroy

Capacity (GPM): 100

- Quarterly inspection
- Replaced pump motor #1
- Installed a 2" control valve

Oakridge Road – Lewistown

Capacity (GPM): 100

- Quarterly inspection
- Relocated conduits

I. RESERVOIRS, STORAGE TANKS AND STANDPIPE

In addition, the distribution system provides water from two (2) clear well tanks and seven (7) storage tanks. The tanks and their capacities are outlined below. Maintenance consisted of quarterly inspections and the following:

Location/Tank:	Capacity	Maintenance
Laurel Creek Filtration Plant Clear Well Tank #1	1,250,000	
Laurel Creek Filtration Plant Clear Well Tank #2	1,250,000	
North Walnut Street – Lewistown	2,000,000	Inspected and cleaned
West End – Lewistown	1,322,000	
Derry Township – Lewistown	250,000	
Swarey Lane – Belleville	250,000	Constructed a control vault for altitude valve
Juniata Terrace – Lewistown	135,000	
Rockville – Belleville	97,000	Inspected and cleaned
Hawstone – Granville	86,000	

J. FILL STATIONS

Normal preventative maintenance and quarterly inspections were completed throughout the year at the following locations:

Depot Street, Lewistown

Parccheytown Road, Lewistown

- Rebuild 2" RPZ

Mill Street, Reedsville

- Replaced heater

K. AUTOMOTIVE EQUIPMENT ON HAND - DECEMBER 31, 2022

YEAR	MAKE (ID #) VEHICLE	MILEAGE
1998	International Dump Truck (#3-08928)	Retired
2007	Ford F-750 Dump Truck (#9-74129)	109,243
2011	Ford Dump Body (#14-20023)	75,839
2013	Ford F350 Utility Body (#11-80880)	128,884
2013	Ford F150 (#1-92111)	132,074
2015	Chevrolet Silverado 1500 Crew Cab (#12-97523)	120,769
2015	Chevrolet Silverado 1500 (# 4B-96545)	88,837
2017	International Dump Truck (#8-01892)	41,154
2018	Chevrolet 3500 Utility Body (#2-61926)	46,168
2018	Chevrolet Silverado 1500 Crew Cab (#6-39602)	86,174
2019	Ford F350 (#16-18666)	23,462
2020	Ford F350 Utility Body (#7-86373)	25,922
2020	Ford Escape (#5-11215)	18,004
2021	Ford F350 (#17-09646)	14,626
2021	Ford F150	7,683
	MACHINERY	HOURS
1995	John Deere Backhoe (14263)	Retired
2006	Mustang Skid Loader	3,171
2010	Case 590 Backhoe (32401)	3,470
2013	Takeuchi 285 Excavator	3,001
2017	Mustang Excavator 350Z	1,105
2021	Mustang Skid Steer 2600	141
2003	Moritz Trailer (08868)	N/A
2008	Landscape Trailer (80196)	N/A
2010	Hudson Trailer 12 Ton (00006)	N/A
2015	12 Ton Hudson Trailer (00029)	N/A
2016	Homesteader Job Trailer	N/A
	Trailer, Boat (7323018)	N/A
	Trailer Mounted Water Buffalo (13686)	N/A
	Trailer Mounted Generator	N/A

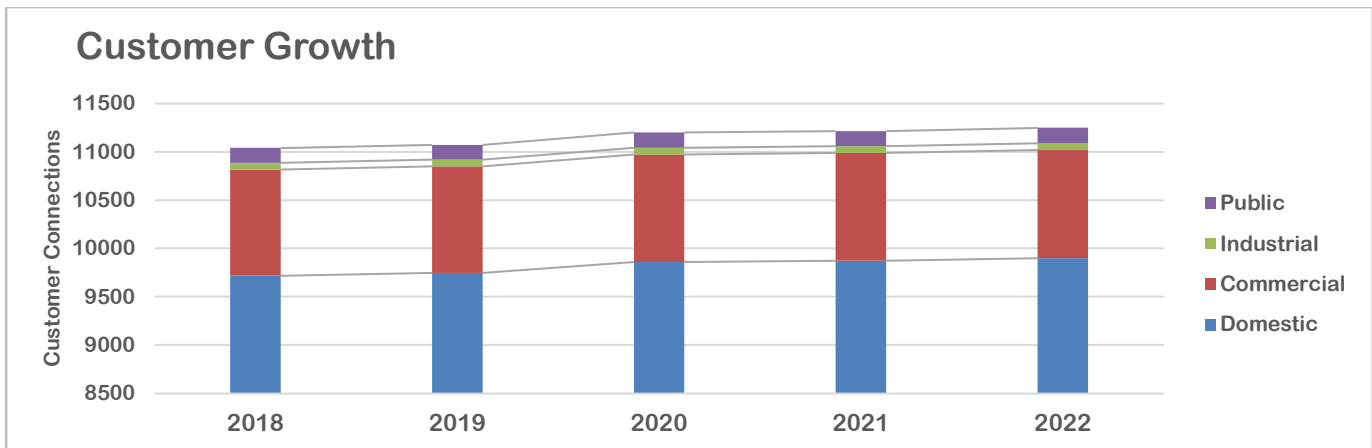
PART II OPERATIONS

A. CONSUMERS

The number of metered consumers served by the Authority totaled 11,249 as of December 31, 2022. The total number of metered consumers increased by 36 compared to 2021. Multiple dwelling units totaled 301 serving 1,385 individual consumers.

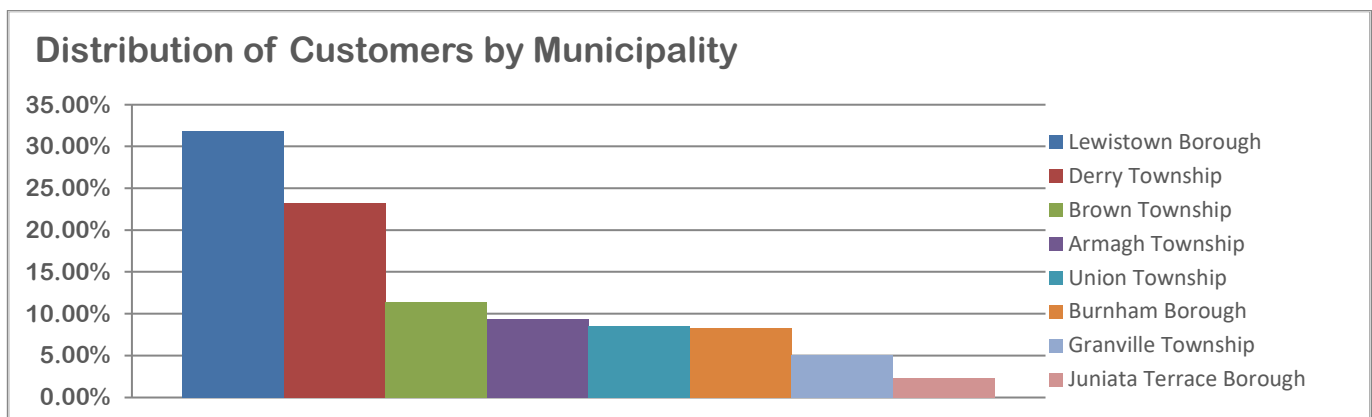
The following tabulation of metered consumers for the past five (5) years is shown for comparative purposes:

Classification	2018	2019	2020	2021	2022
Domestic	9,720	9,745	9,859	9,874	9,900
Commercial	1,097	1,104	1,113	1,113	1,119
Industrial	69	69	71	71	72
Public	<u>155</u>	<u>155</u>	<u>157</u>	<u>155</u>	<u>158</u>
TOTAL	11,041	11,073	11,200	11,213	11,249



Average Daily Water Consumption - As of December 31, 2022

Customer Type	# of Customers	Percentage	Consumption GPD
Domestic	9,900	88.0%	1,028,068
Commercial	1,119	10.0%	377,395
Industrial	72	0.6%	591,249
Public	<u>158</u>	<u>1.4%</u>	<u>70,756</u>
Total, Existing Service Area	11,249	100.0%	2,067,468



B. USE OF WATER

The total water consumption by metered customers for the year 2022 was 754,626,000; the average daily metered consumption was 2,067,000 gallons. The commercial, industrial, and public categories of metered consumption increased 15,337,000 gallons or 12.2%. The domestic metered consumption decreased by 1,967,000 or 0.52%.

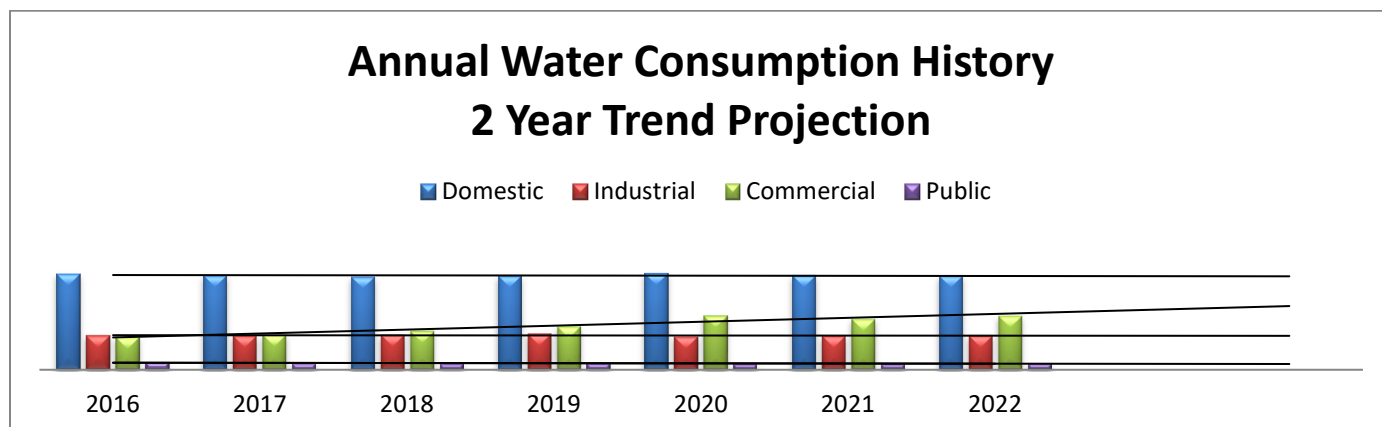
The metered non-consumption water category has been added (2018). The non-consumption represents metered water used throughout the distribution system to maintain water quality.

A tabulation of the water usage by metered customers for the last 10 years (2013 - 2022) is presented in the following table.

**TABLE No. 2
Mifflin County Municipal Authority
Water Supplied to Metered Consumers – 10 Year History**

METERED CONSUMPTION '000 GALS	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
DOMESTIC	375,245	377,212	387,037	378,239	373,608	379,696	383,824	377,856	382,597	393,730
COMMERCIAL	137,749	135,852	134,468	145,390	141,323	137,232	137,219	136,100	138,323	147,156
INDUSTRIAL	215,806	203,547	217,682	174,666	155,797	141,671	131,192	121,319	121,782	118,716
PUBLIC	25,826	24,645	24,709	27,283	25,635	27,211	31,235	28,765	29,346	29,709
ANNUAL METERED CONSUMPTION	754,626	741,256	763,896	725,578	696,363	685,810	683,470	664,040	672,048	736,253
DAILY METERED CONSUMPTION (MGD)	2,067	2,031	2,093	1,988	1,908	1,879	1,873	1,819	1,841	1,889
METERED – NON-CONSUMPTION	50,451	53,469	43,181	43,018	39,411	-	-	-	-	-
ANNUAL PLANT PRODUCTION	952,915	997,483	901,601	887,175	869,002	787,699	849,859	843,760	859,195	935,775
DAILY PLANT PRODUCTION (MGD)	2,611	2,733	2,470	2,431	2,381	2,158	2,328	2,312	2,354	2,564
TOTAL METERED CONSUMPTION	805,077	794,725	807,077	768,596	735,804	685,810	683,470	664,040	672,048	783,195
UNACCOUNTED WATER (MG/Year)	147,838	202,758	94,524	118,579	133,198	101,889	166,389	179,720	187,147	199,522
UNACCOUNTED WATER (MGD)	.405	.556	.259	0.325	0.365	0.279	0.456	0.492	0.513	0.547
UNACCOUNTED WATER (%)	15.51%	20.33%	10.48%	13.37%	15.33%	12.94%	19.58%	21.30%	21.78%	21.32%

Based on total finished water production at the filtration plant released to the system of 952,915,000 gallons and the total metered consumption of 754,626,000 gallons the total percentage of unaccounted for water is 15.51% or 147,838,000 gallons (0.405 MGD). Unaccounted for water is the difference between the amount of water produced and delivered from the source of supply, and the amount of metered consumption. Unaccounted for water includes unmetered uses such as hydrant flushing, firefighting, leakage from pipeline joints and broken pipes and under registration of customer meters. The acceptable standard adopted by the DEP for modern water distribution systems is 20% maximum unaccounted for water. Active water leak detection is completed semi-annually, at a minimum, as a remedy to reduce unaccounted for water.



Total Water Produced, Sold and Unaccounted For

Period	# of Water Customers	Water Produced 000's Gallons	Water Consumption 000's Gallons	Unaccounted for 000's Gallons	% of Loss
2010	10,755	937,419	750,693	186,726	19.9
2011	10,728	905,077	729,382	175,695	19.4
2012	10,723	905,884	730,091	175,793	19.4
2013	10,724	935,775	736,253	199,522	21.3
2014	10,732	859,195	672,048	187,147	21.8
2015	10,750	843,760	664,040	179,720	21.3
2016	10,944	849,859	683,470	166,389	19.6
2017	11,036	787,699	685,810	101,889	12.94
2018	11,041	869,002	735,804	133,198	15.33
2019	11,073	887,175	768,596	118,579	13.37
2020	11,200	901,601	807,077	94,524	10.48
2021	11,213	997,483	794,725	202,758	20.33
2022	11,249	952,915	805,077	147,838	15.51

The following tabulation illustrates changes in water consumption and the number of consumers between 2021 and 2022 and presents the average daily usage per consumer during 2022:

Classification	2021 vs. 2022 Change in Gallons	2021 vs. 2022 Change by Percent	Consumer Change 2022	2022 Avg Daily Use Per Consumer GPD
Domestic	-1,967,000	-0.52%	26	104
Commercial	1,897,000	1.40%	6	337
Industrial	12,259,000	6.02%	1	8,212
Public	1,181,000	4.79%	3	448
TOTAL	13,370,000	11.7%	36	

C. OPERATING REVENUES AND EXPENSES

In accordance with the Trust Indenture dated as of September 30, 2021, an operating budget of \$3,388,873 was recommended by the Consulting Engineer for the year 2022 and was adopted by the MCMA Authority Board on December 15, 2021.

A tabulation of the actual operating revenues and operating expenses for 2022 and a budget to actual comparison is shown below. The actual revenues were over the adopted budget by \$114,518 and the operating expenses were under the adopted budget by \$471,640. The operating income before capital expenditures was \$2,188,793.

Revenue and Expense – Budget to Actual – Budgetary Basis

Operating Revenue	MCMA Actual Revenue	2022 Approved Budget	Over (Under) Budget
Metered	5,543,175	5,446,105	97,070
Unmetered	216,948	199,500	17,448
Total Operating Revenues	\$5,760,123	\$5,645,605	\$114,518

Operating Expense	MCMA Actual Expenses	2022 Approved Budget	Over (Under) Budget
General & Administration	1,782,174	2,003,581	(221,407)
Filtration Plant	466,751	633,000	(166,249)
Purification System	302,797	381,000	(78,203)
Distribution System	308,067	285,692	22,375
Control/Pumping Stations	44,607	64,400	(19,793)
Water Collection System	11,235	21,200	(9,965)
Net Consumer Deposits Paid	1,602	0	1,602
Total Operating Expenses	\$2,917,233	\$3,388,873	(471,640)
Operating Income	\$2,842,890	\$2,256,732	\$586,158

Nonoperating Revenue (Expenses)	MCMA Actual Expenses	2022 Approved Budget	Over (Under) Budget
Interest Income	17,224	2,000	15,224
Investment Income	129,355	800	128,555
Capital Grants Received	15,000	0	15,000
Proceeds on Sale of Capital Assets	26,701	0	26,701
Cash Transferred on Acquisition	(1)	0	(1)
Principal Long-Term Debt & Revenue Bonds	(300,000)	(1,251,500)	951,500
Debt Service Interest	(542,376)	(902,626)	360,251
Total Nonoperating Revenue (Expense)	(654,097)	(2,151,326)	1,497,229
Net Income Before Capital Expenditures	\$2,188,794	\$105,406	\$2,083,388

The following tabulation is a comparison between 2020, 2021 and 2022 revenues billed and the changes by dollar amount and percent:

	2020	2021	2022	Compare 2021 to 2020		Compare 2022 to 2021	
				\$\$\$'s	%	\$\$\$'s	%
Domestic	3,618,264	3,610,206	3,600,044	(8,058)	-0.2%	(10,162)	-0.3%
Commercial	1,019,679	1,035,614	1,047,787	15,935	1.6%	12,173	1.2%
Industrial	510,079	513,030	542,126	2,951	0.6%	29,096	5.7%
Public	235,152	215,780	216,993	(19,372)	-8.2%	1,213	0.6%
TOTAL	\$ 5,383,174	\$ 5,374,630	\$ 5,406,950	(8,544)	-0.2%	32,320	0.6%

D. 2022 ADDITIONS AND RETIREMENTS TO FIXED ASSETS/CAPITAL

The following capital additions were recorded in 2022.

Account #	Account	Description	Itemized	Total \$
1.00.104000	Filtration Plant	Ozone Room LED Lights	8,792	
		Actuators With Mount Hardware	96,666	
		Steel Entrance Doors	7,863	
		Fluoride Analyzer	17,826	
		Clarifier Engineering Study	23,298	154,445
1.00.113000	Distribution Mains	Henrietta St - Lewistown	6,012	
		Cornell St - Lewistown	50,297	
		Jewel St - Lewistown	13,709	
		Valley St - Lewistown	2,375,012	
		Shelly Dr - Reedsville	21,948	
	Market St - Lewistown	2,428	2,469,407	
1.00.114000	Service Lines 3/4"	Labor/Material & Supplies	10,370	10,370
1.00.114010	Service Lines 1"	Labor/Material & Supplies	675	675
1.00.114020	Service Lines > 1"	Labor/Material & Supplies	6,182	6,182
1.00.115000	Meters	Meters 5/8 x 3/4"	5,050	
		HR-E Registers	96,760	
		Meters 1"	1,215	
		Meters 1 1/2"	3,486	
		Meters 2"	1,941	
		Meter Material	5,026	113,478
1.00.116000	Fire Hydrant	New/Replaced System Hydrants	45,692	45,692
1.00.119000	Office Equipment	FP Dell Laptop	842	
		CN80 Handheld - 5 yr Service Plan	4,182	
		Cyber Security Intrusion Monitoring Software	10,460	
		MS Office Licenses (6)	1,830	17,314
1.00.120000	Other General Equipment	Mitsubishi Mini Splits (4)	12,800	
		Skid Steer Forks	770	
		18' X 6' Trailer	7,145	
		FCS Tricorr Correlator	25,500	
		AED's (3)	4,311	50,526
		Total:	2,868,089	

The following fully depreciated items were recorded as of 12/31/22 per policy. The assets have been removed from service or retired after five (5) years of full depreciation.

Account #	Account	Asset Retired	Depreciation \$	Gain/(Loss)
1.00.104000	Water Filtration Plant	Tank Maintenance	68,050	
		Ozone Analyzer	6,277	
		Contact Tank #1 & #2 Maintenance - 2008	263,435	
		Contact Tank #1 & #2 Maintenance - 2009	259,935	
		Stream Release Monitor	2,980	
		Streaming Current Controller	2,500	
		Contact Tank #1 & #2 Maintenance - 2010	259,935	
		Cell Assembly CT 75	22,075	
		Ozone System Analysis	10,325	
		Melrose Solution ZM Monitor	4,445	(148)
		1.00.119000	Office Equipment	Dell Optiplex 380 (6)
Dell VOSTRO (Foremen)	2,421			
Vostros V270 BTX Desktop (2)	1,343			
Laptop	1,276			
Ipad	554			
1.00.120000	Other General Equipment	2019 Ford F350 & Accessories	34,894	(26,681)
		Mower	2,975	
		Itron Mobile Lite	10,196	
		Hudson HTD18C 12 Ton Trailer	12,033	
		Thumb Attachment - Case Backhoe	5,115	
		Truck Decal 2016	250	
Total:			975,781	(26,829)

E. BUDGET FOR YEAR 2023

In compliance with the Trust Indenture, an operating budget for the year 2023 was submitted on December 21, 2022. The budget with a 3% rate increase was adopted by the Authority on December 21, 2022, and submitted to the Trustee, US Bank, as follows:

<u>REVENUES</u>		
Metered	5,756,941	
Unmetered	219,500	
Total Revenues:		\$ 5,976,441
<u>OPERATING EXPENSES</u>		
Water Collection System	26,200	
Purification System	347,000	
Filtration Plant	583,000	
Control Stations	64,400	
Distribution System	364,500	
Security	8,000	
Timber Management	5,000	
General Expenses	4,220,060	
Total Operating Expenses:		\$ 5,618,160
<u>MANAGEMENT EXPENSES</u>		
Board Salaries & Expenses	30,900	
Consulting Engineer Fees	73,000	
Legal Services	35,000	
Audit & Consulting Fees	41,000	
Total Management Expenses:		\$ 179,900
Total 2023 Operating Budget Expenses:		\$ 5,798,060

The operating budget for 2023, which according to the Trust Indenture must be prepared prior to the closing of the books for the previous year, shows an increase of \$15,561 compared to the operating budget for the year 2022. For 2023, the interest expense and depreciation has been added to the operating budget.

Long Term Debt service principal payments for 2023:

2021 Water Revenue Bond Series	\$890,000
Lewistown Borough Note	\$376,500

Financial Metrics	Goal	2023 Budget
Operating Ratio	> 1.0	1.03
Capital Reserves	> 15% or \$896,466	\$2,908,362

**Table No. 3
MIFFLIN COUNTY MUNICIPAL AUTHORITY
2023 CAPITAL BUDGET ADDITIONS AND IMPROVEMENTS**

<i>Control Facilities</i>	<u>Itemized</u>	<u>Total</u>
Mechanic St Pumps	25,000	25,000
<i>Filter Plant</i>		
Soda Ash Feed System	60,000	
Filter Plant Security System Upgrade	245,000	
Filter Plant Blower VFDs	175,000	
SCADA Hardware	250,000	
Concrete Sludge Lagoon, Settling Basin and Drying Bed	305,000	
Monitoring Equipment Filter Plant	56,000	1,091,000
<i>General Equipment</i>		
Uninterrupted Service Plan (USP) Generators	50,000	
2023 Ford Explorer	40,000	90,000
<i>Office Structure</i>		
Office Design and Construction	2,000,000	2,000,000
<i>Fire Hydrants</i>		
Fire System Improvements	35,000	35,000
<i>Mains</i>		
SRBC Mitigation - Armagh Twp Main 1200'	50,000	
8" Waterline from Sheetz Dr to Airport Rd Reedsville 2,000'	250,000	
20" Waterline Replacement Old US HWY 322, Milroy 3500'	300,000	
Belleville Tank to Front Mountain Rd, Belleville 3,200'	335,000	
Front Mountain Rd, Belleville 3,000' - 8"	490,000	
Tollgate Hill - Fire Protection Main Phase I	50,000	
Fire System Improvements Mains	500,000	1,975,000
<i>Office Equipment</i>		
Meter Reading Hardware Upgrade & Contractor Install	2,600,000	
Meters	20,000	2,620,000
<i>Water Supply</i>		
Belleville Tank Power Option	50,000	
Juniata Terrace Alternate Supply	1,000,000	1,050,000
	Total	8,886,000

F. EMPLOYMENT AND LABOR RELATIONS

The following table shows the Authority employees by classification as of December 31, 2022:

Classification	Total Employees	Employees Represented by AFSCME Local 213
Administrative/Service	8	2
Filter Plant	8	4
Distribution	8	3
TOTAL	24	9

The Authority has not experienced a labor union strike since 1976. Current union relations are characterized as very good. The current contract with the Union expires on December 31, 2025.

PART III

QUALITY OF WATER

A. BACTERIOLOGICAL ANALYSIS

Bacteriological analysis of samples of the treated water from various points on the distribution system were made weekly throughout 2022. The samples were tested at our Laurel Creek Water Treatment Plant Lab using Colilert testing. These samples were incubated at 34.5 – 35.5 degrees Celsius for 24 hours. The samples were then analyzed for growth. The Authority is required by law to report any growth of total coliforms as a “presence” while no growth is reported as “absence”.

The series of analysis consisted of 396 samples at predetermined locations. The number of 100ml samples showing growth as well as the percentage of positive samples is represented in Table 4. Thirty (30) samples are required monthly from predetermined locations. In a five (5) week month thirty-seven (37) samples from predetermined locations are required monthly.

The number of positive results of coliform growth, which is determined by the presence of at least one colony, has been shown.

Standards of the US EPA stipulate that for treated water of acceptable quality, not more than 10% of all standard 100ml portions examined per month by the Colilert procedure shall show the presence of coliform organisms.

B. PURIFICATION

Treatment Plant Chemicals Consumed:

Chemical	2018 Chemical Feed (lbs)	2019 Chemical Feed (lbs)	2020 Chemical Feed (lbs)	2021 Chemical Feed (lbs)	2022 Chemical Feed (lbs)
Soda Ash (dry)	80,111	25,550	35,850	142,000	108,650
Del PAC 2020	136,480	88,712	105,772	147,026	117,463
Corrosion Inhibitor	21,737	15,623	30,009	64,251	44,781
Fluoride (dry)	7,250	7,300	7,100	5,250	-
Fluoride (wet)	-	-	-	11,760	29,420
Salt (Purex)	46,250	59,325	78,275	93,780	48,980
Sodium Hypo-Chlorite Gal	209,821	194,473	192,815	276,694	240,124

**Table No. 4
 MIFFLIN COUNTY MUNICIPAL AUTHORITY
 2022 Annual Report – Colilert**

**Bacteriological Test Results Showing Coliform Organisms per 100ml. For Required Water Samples and Percent of 100ml.
 Portions of Treated Water Showing Coliform Organisms**

	Total Monthly Tests	Coopers Gap	Knob Mountain Road	Schrader Church	Track Lane	Derry Township	Rolling Hills	Rt 522 N – Log Cabin Inn	Oakridge Road	Apron Green Lane	Belleville Lane	Rockville Tank	Mechanic Street Pump Station	Belleville Tank	Walnut Street Tank	Juniata Terrace Tank	Locust Drive, Reedsville	Laurel Creek Filtration Plant	Ferguson Valley Road	Rt 522 S – Lerch	Granville Industrial Park Rd	Greenbriar Road	Geisinger Lewistown Hospital	Derry Tank	West End Tank	Lewistown Waste Water Plant	70 Chestnut St – MCMA	Burnham Borough Office	West Railroad Street	Tollgare Hill	Oak Street Pump Station	Number Positive	% Positive	
JAN	31	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
FEB	31	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
MAR	37	1	1	1	1	1	2	1	1	3	1	1	2	1	1	1	2	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1	0	0
APR	31	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
MAY	37	1	1	1	1	1	2	1	1	3	1	1	2	1	1	1	2	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1	0	0
JUN	31	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
JUL	31	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
AUG	37	1	1	1	1	1	2	1	1	3	1	1	2	1	1	1	2	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1	0	0
SEP	31	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
OCT	31	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
NOV	37	1	1	1	1	1	2	1	1	3	1	1	2	1	1	1	2	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1	0	0
DEC	31	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
Total	396	12	12	12	12	12	16	12	12	28	12	12	16	12	12	12	16	12	16	12	16	12	12	12	12	12	12	12	12	12	12	0	0	

C. LAUREL RUN FILTRATION PLANT

During the year 2022, the Filtration Plant was operated on a “tank fill” mode of operation, where the clearwells were allowed to draw down overnight and then refilled during the next 12-16 hours of operation. The estimated total finished, treated water produced by the Filtration Plant was 1,082,857,784 gallons. 952,914,778 gallons went directly to the distribution system while the remainder was used to backwash the four mixed media gravity filters as well as for various processes within the plant.

Rainfall recorded at the plant for 2022 totaled 42.39 inches. This was 1.84 inches more than the amount recorded for 2021. The four (4) wettest months were November, May, February, and June. The four (4) driest months were July, January, October, and March. Rainfall recorded at the Filtration Plant from 2015 to 2022 follows:

Month	2015	2016	2017	2018	2019	2020	2021	2022
January	1.55	2.35	3.15	2.65	4.35	1.55	1.20	2.05
February	.25	4.05	1.35	6.00	3.95	2.20	2.55	5.20
March	1.50	.90	2.50	1.35	2.85	3.95	2.80	2.45
April	2.35	1.25	2.15	3.75	3.40	2.60	1.65	3.44
May	.85	2.25	6.15	3.90	6.45	4.05	3.25	5.30
June	7.85	1.70	1.50	4.65	3.75	1.90	2.25	3.95
July	2.95	1.15	6.65	6.75	2.15	0.23	6.80	1.20
August	2.95	3.00	4.00	8.00	2.45	4.45	5.30	3.25
September	3.10	2.00	1.50	10.05	1.20	2.05	8.75	3.90
October	3.50	1.05	7.05	3.10	1.05	2.75	3.35	2.35
November	1.55	1.90	1.95	5.15	2.55	2.95	1.40	5.55
December	4.80	2.75	1.40	5.15	2.90	5.70	1.25	3.75
Total	33.20	24.35	39.35	60.50	37.05	34.38	40.55	42.39

Average annual rainfall for the period 2015-2022 is 38.97 inches.

PART IV INSURANCE

A. SCHEDULE OF INSURANCES

The properties of the Authority are insured in compliance with the Trust Indenture. The amount of fire insurance coverage is adequate and in accordance with the recommendation of the Authority's Consulting Engineer.

It is recommended that all existing annual policies for public liability, automobiles, and employees compensation expiring during the year be renewed with the limits of coverage as now exists.

A complete list of all insurance policies in effect as of December 31, 2022, is presented in Table No. 5. Certificates of Insurance covering all policies are on file with the Trustee in accordance with the Trust Indenture.

Under terms of the agreement with the union representing the employees, the Authority has provided life insurance for all its employees. This insurance is under the group plan of Mutual of Omaha Life Insurance Company and has coverage of \$20,000 for all of the regular employees, Business Manager, Water Production Manager; coverage of \$25,000 on the Executive Director.

**TABLE NO. 5
MIFFLIN COUNTY MUNICIPAL AUTHORITY
SCHEDULE OF INSURANCE IN EFFECT AS OF 12/31/2022**

POLICY NUMBER	EFFECTIVE DATE	COMPANY	COVERAGE	LIMITS	PREMIUMS
PA B0686PC2014-1	06/13/22 to 06/13/23	PIRMA	General Liability & Legal Liability Defense & Claim Payment Building & Personal Property Value Inland Marine Boiler & Machinery Automobile Physical Damage	\$10,000,000 21,269,836 Included Included ACV	
			Extensions of Coverage: Data Processing Equipment & Media Errors & Omissions Employee Benefits Pollution	100,000 500,000 100,000 500,000	\$57,745
107444834	06/13/22 to 06/13/24	Travelers	Crime - Forgery Computer Crime – Fraud Funds Transfer Fraud	100,000 100,000 100,000	
					\$700
				Total Premium	\$58,445

A complete re-appraisal and report of the buildings, fixed contents and movable contents of the Authority's various locations was effective October 24, 2012. The inspection and analysis was completed by Industrial Appraisal Company personnel in accordance with a formal agreement authorizing the appraisal.

PART V
ADEQUACY OF RATES AND STATUS OF FUNDS

A. ADEQUACY OF RATES Per Indenture Section 5.01

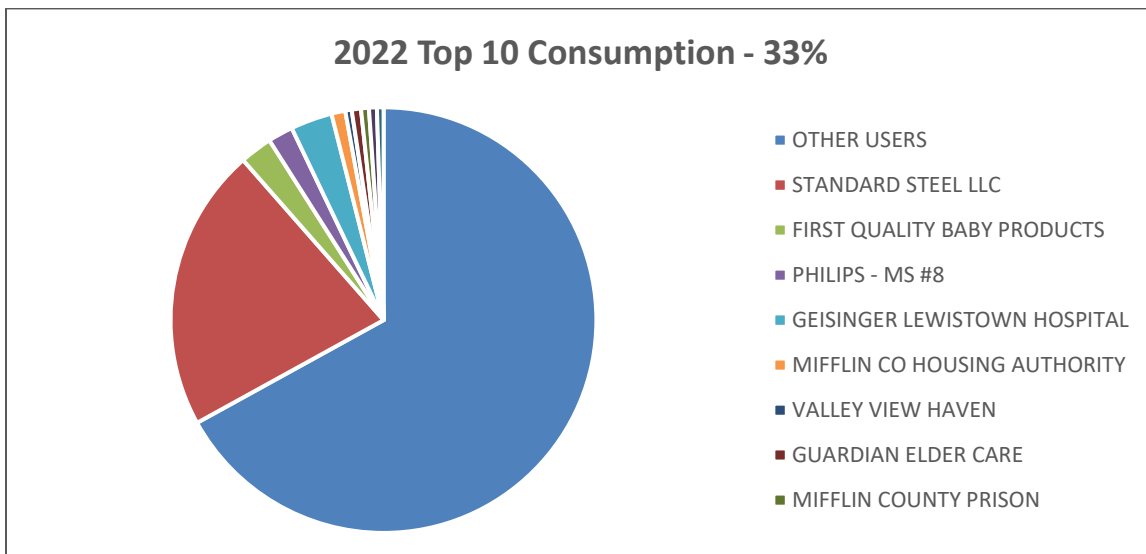
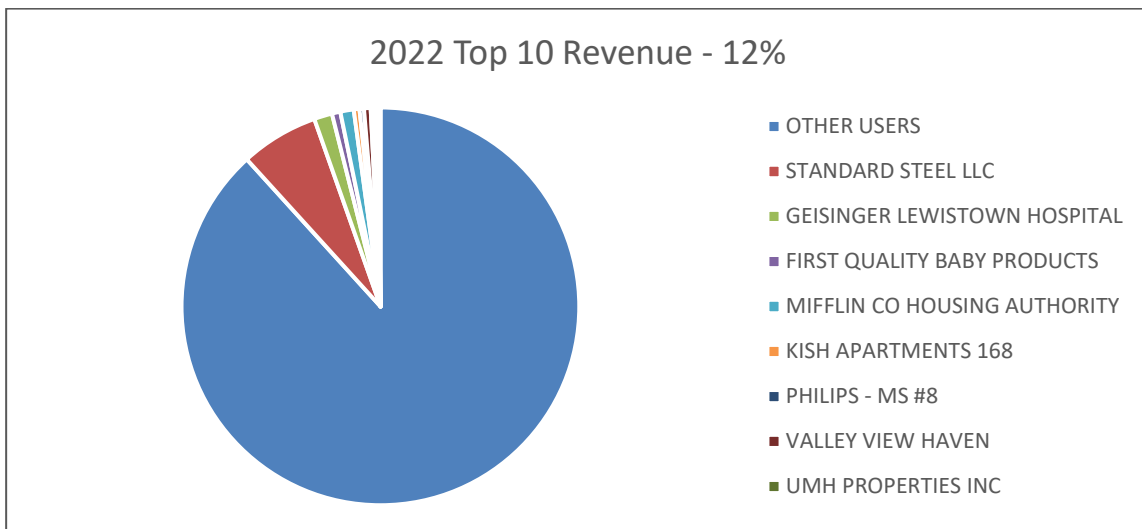
The rates charged for services rendered by the Mifflin County Municipal Authority are adequate to meet calendar year 2022 financial obligations as required by Trust Indenture Section 5.01. The rate tests required by the Indenture were conducted as part of preparing the 2023 Operating Budget and were submitted to the Trustee along with the approved 2023 Capital Budget.

**TABLE NO. 6
STATEMENT OF ESTIMATED REVENUES AND EXPENDITURES FOR THE PERIOD
JANUARY 1, 2023 TO DECEMBER 31, 2023**

REVENUES	
Metered	5,756,941
Unmetered	219,500
TOTAL REVENUES	\$ 5,976,441
OPERATING EXPENSES	
Water Collection System	26,200
Purification System	347,000
Filtration Plant	583,000
Control Stations	64,400
Distribution System	364,500
Security	8,000
Timber Management	5,000
General Expenses	4,220,060
TOTAL OPERATING EXPENSES	\$ 5,618,160
MANAGEMENT EXPENSES	
Board Salaries & Expenses	30,900
Consulting Engineer Fees	73,000
Legal Services	35,000
Audit and Consulting Fees	41,000
TOTAL MANAGEMENT EXPENSES	\$ 179,900
TOTAL OPERATING AND MANAGEMENT EXPENSES	\$ 5,798,060
NET OPERATING INCOME (EXPENSE)	\$ 178,381
NON-OPERATING EXPENSES	
Debt Service Principal	(890,000)
Lewistown Borough Principal	(376,500)
Less Depreciation	1,593,100
NET INCOME (EXPENSE)	\$ 504,981

**MIFFLIN COUNTY MUNICIPAL AUTHORITY
10 LARGEST CUSTOMERS - 2022**

#	FIRM	BUSINESS	REVENUE
1	Standard Steel LLC	Steel Fabrications	353,796
2	Geisinger Lewistown Hospital	Health Care	81,074
3	First Quality Baby Products	Manufacturing	38,075
4	Mifflin County Housing	Elderly Housing	61,536
5	Kish Apartments	Elderly Housing	26,043
6	Philips	Manufacturing	19,040
7	Valley View Haven	Nursing Home / Assisted Living	30,746
8	UMH Properties Inc	Mobile Home Park	16,346
9	Guardian Elder Care	Nursing Home	14,401
10	Mifflin County Prison	Prison	13,278
		Total	\$654,334



Minimum Monthly Water Charge – Current and Historic

Meter Size	Gallons	01/01/22	01/01/21	01/01/20	01/01/19	01/01/18	01/01/17
5/8"	1,000	19.91	19.91	19.91	19.91	19.91	19.52
3/4"	6,000	53.44	53.44	53.44	53.44	53.44	52.39
1"	12,000	76.06	76.06	76.06	76.06	76.06	74.57
1 1/2"	30,000	145.72	145.72	145.72	145.72	145.72	142.86
2"	75,000	303.27	303.27	303.27	303.27	303.27	297.32
3"	130,000	506.87	506.87	506.87	506.87	506.87	496.93
4"	270,000	995.66	995.66	995.66	995.66	995.66	976.14
6"	500,000	1,584.33	1,584.33	1,584.33	1,584.33	1,584.33	1,553.26
8"	600,000	1,855.06	1,855.06	1,855.06	1,855.06	1,855.06	1,818.69
10"	800,000	2,429.81	2,429.81	2,429.81	2,429.81	2,429.81	2,382.17
12"	1,000,000	3,168.65	3,168.65	3,168.65	3,168.65	3,168.65	3,106.52

In addition to the minimum charge, the following charges were applied to all water consumed.
Water Usage Charge per 1,000 Gallons – Current and Historic

	Gallons/ Month	01/01/22	01/01/21	01/01/20	01/01/19	01/01/18	01/01/17
First	7,000	4.92	4.92	4.92	4.92	4.92	4.82
Next	250,000	2.95	2.95	2.95	2.95	2.95	2.89
All Over	257,000	2.02	2.02	2.02	2.02	2.02	1.98

Where two or more customers are supplied through one meter, the sum of \$15.17 per month shall be added as an Additional Consumer charge to the total calculated water bill for each customer (see below for Fee History).

<u>Year</u>	<u>Per Month</u>	<u>Per Quarter</u>
2022	\$15.17	\$45.51
2021	\$15.17	\$45.51
2020	\$15.17	\$45.51
2019	\$15.17	\$45.51
2018	\$15.17	\$45.51
2017	\$14.87	\$44.61

The affordability ratio goal of < 2.5% was met for 2022. Using the 2018 median household income of \$47,526 and an average quarterly bill of \$102, the MCMA affordability ratio was 1%.

B. STATUS OF FUNDS

The Trust Indenture actual balances of funds as of December 31, 2022 were as follows:

Fund	Balance December 31, 2022
2021 Debt Service Fund	1,243,069.42
Lewistown Borough Note Fund	77,784.75
2021 Construction Fund	11,022,504.35
2021 Bond Redemption & Improvement Fund	285,531.60
Total	\$12,628,890.12